INVESTIGATOR'S ANNUAL REPORT

United States Department of the Interior

National Park Service

All or some of the information you provide may become available to the public.

OMB # (1024-0236)
Exp. Date (11/30/2010)
Form No. (10-226)

Reporting Year:	**Park:**	**Select the type of permit this report addresses:**
2010	Shenandoah NP	Scientific Study

Name of principal investigator or responsible official:	**Office Phone:**
Cynthia Chan	917-497-6232
Mailing address: 20 Lauren Way Rincon, GA 31326 United States	**Office FAX** 912-478-0845 **Office Email** cynthiat.chan@gmail.com

Additional investigators or key field assistants (first name, last name, office phone, office email)

Name: Keely Duff	**Phone:** n/a	**Email:** kduff13@georgiasouthern.edu
Name: Cynthia Chin	**Phone:** n/a	**Email:** chincj@yahoo.com
Name: Lorenza Beati	**Phone:** 912-478-0553	**Email:** lorenzabeati@georgiasouthern.edu

Project Title (maximum 300 characters):

Comparative Analysis of Microsatellite and Mitochondrial Genetic Variation in Ixodes scapularis

Park-assigned Study or Activity #:	**Park-assigned Permit #:**	**Permit Start Date:**	**Permit Expiration Date:**
SHEN-00386	SHEN-2010-SCI-0020	Oct 01, 2010	May 15, 2011

Scientific Study Starting Date:	**Estimated Scientific Study Ending Date:**
Oct 01, 2010	May 15, 2011

For either a Scientific Study or a Science Education Activity, the status is:	**For a Scientific Study that is completed, please check each of the following that applies:**
Continuing	__ A final report has been provided to the park or will be provided to the park within the next two years __ Copies of field notes, data files, photos, or other study records, as agreed, have been provided to the park __ All collected and retained specimens have been cataloged into the NPS catalog system and NPS has processed loan agreements as needed

Activity Type:

Research

Subject/Discipline:

Invertebrates (Insects, Other)

Purpose of Scientific Study or Science Education Activity during the reporting year (maximum 4000 characters):

The purpose of this project is to use samples collected from the different regions within the range of I. scapularis and do a comparative analysis of mitochondrial and microsatellite genes in order to see how these different markers compare to each other and whether both support similar population groupings. In studies similar to our own, researchers found that using only sequences of mitochondrial DNA (mtDNA) was restrictive and failed to detect significant genetic differentiation between populations (Brower and DeSalle 1998; Brunner et al. 1998). By providing additional data for analysis, results should indicate a more realistic depiction of how, why, and where this differentiation is occurring.

Findings and status of Scientific Study or accomplishments of Science Education Activity during the reporting year (maximum 4000 characters):

Two visits were made to Shenandoah National Park on October 15th and 16th, 2010. During the trips several trails were visited in the Big Meadows area of the park. While using the tick flagging technique, 110 ticks were collected, these primarily consisted of nymphs.

Additional lab work for identification and DNA extraction will be conducted over the course of the next year.

For Scientific Studies (not Science Education Activities), were any specimens collected and removed from the park but not destroyed during analysis?

No

Funding specifically used in this park this reporting year that was provided by NPS (enter dollar amount):	**Funding specifically used in this park this reporting year that was provided by all other sources (enter dollar amount):**
$0	$0

List any other U.S. Government Agencies supporting this study or activity and the funding each provided this reporting year:

Paperwork Reduction Act Statement: A federal agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. Public reporting for this collection of information is estimated to average 1.625 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the forms. Direct comments regarding this burden estimate or any aspect of this form to Dr. John G. Dennis, Natural Resources (3127 MIB), National Park Service, 1849 C Street, N.W., Washington, DC 20240.